

Name: \_\_\_\_\_ Date: \_\_\_\_\_

### Polynomial Factoring EXAM (version 653)

1. The quadratic formula says if  $ax^2 + bx + c = 0$  then  $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ . Use the quadratic formula to solve the following equation.

$$x^2 - 12x + 42 = 0$$

Simplify your answer(s) as much as possible.

2. Express the product of  $7 - 5i$  and  $-2 - 9i$  in standard form  $(a + bi)$ .

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3. Write function  $f(x) = x^3 + 12x^2 + 47x + 60$  in factored form. I'll give you a hint: one factor is  $(x + 3)$ .

4. Polynomial  $p$  is defined below in factored form.

$$p(x) = (x + 4)^2 \cdot (x - 1) \cdot (x - 5) \cdot (x - 8)$$

Sketch a graph of polynomial  $y = p(x)$ .

